

1 —> 9. (Twice Amended) A process for controlling [the] pressure within a chamber, comprising
2 the steps of:

3 initial generating an originating valve position feedback signal, said originating valve
4 position feedback signal comprising data representing the position of a motor drive
5 operatively connected to a valve when said valve resides in an originating position, said
6 originating position defined as the position of said valve prior to commencement of said
7 chamber pressure control;

8 first generating a pressure sensor signal responsive to the pressure in said chamber;

9 second generating a step command signal responsive to said pressure sensor signal
10 and a tool logic signal, said step command signal generating comprising applying a pressure
11 control algorithm to said pressure sensor and tool logic signals;

12 third generating a direction/speed command signal responsive to said step command
13 signal and [a]said valve position feedback signal, said direction/speed command signal
14 generating comprising applying a position control algorithm to said step command and valve
15 position feedback signals;

16 actuating [a]said valve responsive to said direction/speed command signal, said
17 actuating comprising moving said valve by operation of said motor drive, said actuating
18 resulting in said valve residing in a position, said valve in fluid communication with said
19 chamber;

20 fourth generating another said valve position [error]feedback signal responsive to
21 said position of said valve, said valve position feedback signal comprising data representing
22 the position of said motor drive operatively connected to said valve; and

23 repeating said ^{first, second,} third generating, said actuating and said fourth generating steps until
24 said pressure is controlled adequately [direction/speed command signal generating step, said
25 actuating step and said valve position error generating step substituting said valve position
26 error feedback signal for said valve position feedback signal].

1 14. (Twice Amended) A process for controlling the fluid flow through a conduit whereby the
2 pressure in a chamber in fluid communication with said conduit is controlled, comprising the steps
3 of:
4 initial generating an originating valve position feedback signal, said originating valve
5 position feedback signal comprising data representing the position of a motor drive
6 operatively connected to a valve when said valve resides in an originating position, said
7 originating position defined as the position of said valve prior to commencement of said fluid
8 flow control;
9 generating a [flow]pressure sensor signal responsive to the [flow]pressure in said
10 [conduit]chamber;
11 generating a step command signal responsive to said [flow]pressure sensor signal and a tool
12 logic signal, said step command signal generating comprising applying a pressure control algorithm
13 to said pressure sensor and tool logic signals;
14 generating a direction/speed command signal responsive to said step command signal and
15 said[a] valve position feedback signal, said direction/speed command signal generating comprising
16 applying a position control algorithm to said step command and valve position feedback signals;
17 actuating [a]said valve responsive to said direction/speed command signal, said actuating
18 comprising moving said valve by operation of said motor drive, said actuating resulting in said
19 valve residing in a valve position, said valve in fluid communication with said conduit;
20 generating another said valve position [error]feedback signal responsive to said position of
21 said valve, said valve position feedback signal comprising data representing the position of said
22 motor drive operatively connected to said valve; and
23 repeating said direction/speed command signal generating step, said actuating step and said
24 valve position [error]feedback signal generating step until said conduit fluid flow and said chamber

- 25 pressure are controlled adequately.[substituting said valve position error feedback signal for said
- 26 valve position feedback signal]